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a corresponding range in contour. Compared with an ordinary ratio of osteological variability, the discrepancies are almost on a par with those exhibited by the coloration of the animal when set over against the more constant markings of most animals." These variations are described somewhat in detail, in connection with a general description of the cranial characters of the species.

Dr. Coues recognizes among the *Mephitinæ* the three genera *Mephitis*, *Spilogale*, and *Conepatus.* The two first named differ not at all in their dental formulæ, while *Conepatus* has usually been considered as lacking the minute first premolar present in the others. Dr. Coues, however, affirms that it is present as a rule, though always minute, but is often either deciduous or abortive, and never functionally developed. Hence the main differences appear to relate to the general contour of the skull, for while Dr. Coues has described each form with great detail he has failed to give a contrasted summary of the differences that severally characterize these so-called genera, — an omission that detracts considerably from the availability of an otherwise excellent paper. While *Mephitis* and *Spilogale* seem to be hardly generically separable, *Conepatus* presents wider differences, especially in respect to the characters of the lower jaw.

No synonymy is formally presented in this connection, but it is mentioned incidentally that the *M. occidentalis* of authors is inseparable from *M. mephitica.* Of *Mephitis* proper only the single recent species *mephitica* is mentioned; of *Spilogale*, a single species only is noticed, *putorius* Linn., based on Catesby (= to the *M. Zorilla*, *bicolor*, and *interrupta* of recent authors), and of *Conepatus* also but a single species (*marputio* Gmel. = *mesoleuca* Licht.).

The supposed new fossil species here described seems to present no very tangible features. Its size is stated to be intermediate between various specimens of the recent *M. mephitica*, the only ostensible characters hence being the excessive tumidity and angulation of the vertex of the skull, and the vertical narrowing of the zygoma anteriorly. In view of the normal tumidity of the frontal region, and especially the tendency, so readily seen in any large series of the skulls of the common species, to a diseased and abnormal enlargement of this part, this alleged character has much less weight than it would otherwise have.

GEOGRAPHY AND EXPLORATION.

THE ISTHMUS OF TEHUANTEPEC. — We extract the following account from Sumichrast's notes on the birds of the isthmus in the fourth Bulletin of the United States National Museum. The contraction of the American continent between the ninety-fourth and ninety-fifth degrees of longitude west from Greenwich forms what is called, quite improperly, perhaps, the Isthmus of Tehuantepec, whose width between the mouth of the Rio Coatzacoalcos and the Bay of Ventosa is about one hundred and eighty miles.

In a physical point of view, the isthmus may be considered as divided into three parts: first, an eastern, extending from the Gulf of Mexico to the Puerta; secondly, a central, from the Puerta to the Chivela; and thirdly, a western, from the Chivela to the Pacific. The eastern part, formed principally of alluvial land and watered by the Coatzacoalcos and its affluents, has its largest portion covered with thick and damp forests, whose vegetation rivals the greatest beauties of tropical nature. The central region presents an undulating surface, embossed with innumerable *lomas*, or hills, which, rising gradually, unite on the western side with the mountains of the Sierra de los Mijes, and toward the east with those of the Sierra de Chimalapa. Although watered by numerous streams, it presents, nevertheless, but a scanty vegetation, essentially characterized by oaks on the side of Sarabbia, and palm-trees on the plateau of Chivela. The western division, or plains of the Pacific, is very dry, and its vegetable physiognomy presents a striking contrast to the rich plains on the Atlantic slope. Of the few rivers which flow through it, the most important are the Tehuantepec, Juchitan, Chicapa, and Ostula. These are so low during part of the dry season that the inhabitants of the villages and *ranchos* situated on their banks have no drinking-water but that which they draw out of holes dug in the sand.

RESOURCES OF THE BLACK HILLS. — In Mr. Jenney's Mineral Wealth, Climate, etc., of the Black Hills of Dakota, we have an apparently authentic account of the natural resources of this region. Compared with some of the world-renowned districts in California and Australia, the placers at present discovered are not remarkably rich, yet there are claims already opened and worked which are yielding a very good return for the labor employed. The reporter adds that the climate of the Black Hills is wonderfully healthy and invigorating, and that wood, water, and grass are everywhere abundant and of the best quality. "There is gold enough to thoroughly settle and develop the country, and, after the placers are exhausted, stock-raising will be the great business of the inhabitants, who have a world of wealth in the splendid grazing of this region."

SIBERIAN EXPLORATION. — Drs. Finsch and Brehm and Count Waldburg Zeil arrived at Ekaterinburg, April 5th, on their way to Siberia. Dr. Nordenskiöld's plan for following up his voyage of last summer from Norway to Siberia, is to start from Gothenburg July 7th, in a steamer capable of taking 10,000 *puds* weight of cargo. He will go up the Yenisei to Dudinko, and there take in cargo and return by the same route to Norway. The Russians on their part propose despatching a vessel from Yeniseisk down the river by way of the Sea of Kara and the North Sea, to St. Petersburg. The Society for the Encouragement of Russian Sea Trade have also commissioned Messrs. Dahl and Randsen, two experienced seamen, to make a detailed survey of the Obi Gulf and estuary.

Exploration in New Guinea. — This great island offers one of the most promising fields at present open to the explorer, as its interior is still an absolute *terra incognita*. The ill success of Mr. Macleay's attempt to penetrate the interior by way of Fly River, was due to the unfavorable season of the year. Mr. O. C. Stone has been more successful, as he ascended the Mai-Kassa River, discovered and named by him the Baxter River, in the cooler season. The banks are sparsely populated, the natives being cannibalistic at times in their tastes. In his account of his adventures in the Ellengowan, a steamer of eighty tons, he describes the dugong, kangaroos, Megapodius (one of the nests of these fowl being ten feet high by ninety in circumference), birds-of-paradise, large snakes, and the vegetation of the shores. To the naturalist and botanist the shores of the Baxter River present features of rare interest when we take into consideration the comparative immunity from danger, combined with the ease with which they may be approached, both being considerations of no small importance. That the southern part of New Guinea is either cut up into a series of islands, or intersected by rivers and streams of considerable length, is beyond doubt.

At the meeting of the Royal Geographical Society, held May 8th, Mr. Stone read a paper on The Country and Natives of Port Moresby, New Guinea, and a paper on The Natives and Products of Fly River, New Guinea, by Signor L. M. D'Albertis. Sir Henry Rawlinson hoped that a "Cameron" for New Guinea would soon turn up, and that Mr. Young would be the coming explorer, and would force himself into the large and comparatively unknown regions of New Guinea.

MICROSCOPY.[1]

Polarization of Living Tissues. — A correspondent of *Science Gossip* has recently noticed that the tissues of a living shrimp are affected by the polariscope, giving most beautiful colors, which cannot be obtained by using the flesh after it has been boiled, and he desires to know whether any one else has observed this. Rev. E. C. Bolles, of Salem, Mass., has been accustomed for years, in his popular lectures on the microscope, to demonstrate this by exhibiting upon the screen small crustaceans or aquatic larvæ, illuminated by polarized light; and a finer screen-effect can hardly be conceived than the flashes of color that play over the large and well-defined image of the muscular fibres at every contraction connected with the movements of the living animal.

Arranging Diatoms. — Dr. G. C. Morris, of Philadelphia, arranges diatoms with facility and success, by using the mechanical stage as a means of holding and moving the bristle which handles the diatoms, while the sub-stage prolonged upwards (through the opening of the regular stage) by means of a tube, serves as a stage to hold the object slide. An arm, attached by means of a socket to the stage, carries a small cork,

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[1] Conducted by Dr. R. H. Ward, Troy, N. Y.